

What is claimed is:

- 1           1. A method of operating a router in an access network  
2 infrastructure connected to a plurality of service networks, comprising the steps  
3 of:  
4           receiving an incoming packet with a source address;  
5           comparing the source address of the incoming packet to network  
6 addresses allocated to subscribers of services provided by a service network; and  
7           if the source address matches a network address allocated to  
8 subscribers of services provided by the service network, forwarding the packet to  
9 a router in the service network.
- 1           2. The invention of claim 1 wherein the source address of the  
2 incoming packet is assigned to a network access device associated with the  
3 subscriber of services provided by the service network.
- 1           3. The invention of claim 1 wherein the service networks utilize  
2 the Internet Protocol and wherein the addresses are Internet Protocol addresses.
- 1           4. The invention of claim 3 wherein the plurality of service  
2 networks are operated by different Internet Service Providers.
- 1           5. The invention of claim 3 wherein the plurality of service  
2 networks offer access to different Internet Protocol-based services.
- 1           6. The invention of claim 3 wherein the access network  
2 infrastructure comprises a hybrid fiber coaxial network.
- 1           7. The invention of claim 6 wherein the source address of the  
2 incoming packet identifies a network access device attached to the hybrid fiber  
3 coaxial network with a cable modem.

1                   8. A method of operating an access network infrastructure  
2 comprising a plurality of routers and connected to a plurality of service networks,  
3 comprising the steps of:  
4                   using destination-based routing at the routers in the access network  
5 infrastructure except at one or more managed access point routers having  
6 connections to routers in the plurality of service networks;  
7                   using policy-based routing at the managed access point routers so  
8 that packets having a source address allocated to subscribers of services provided  
9 by a service network will be forwarded to a router in the service network.

1                   9. The invention of claim 8 wherein packets between network  
2 access devices connected to the access network infrastructure are routed in the  
3 access network infrastructure using destination-based routing without being  
4 forwarded to a service network.

1                   10. The invention of claim 8 wherein the access network  
2 infrastructure provides access to local services.

1                   11. The invention of claim 10 wherein packets associated with the  
2 local services are routed in the access network infrastructure using destination-  
3 based routing without being forwarded to a service network.

1                   12. The invention of claim 8 wherein the source address of the  
2 incoming packet is assigned to a network access device associated with the  
3 subscriber of services provided by the service network.

1                   13. The invention of claim 8 wherein the service networks utilize  
2 the Internet Protocol and wherein the addresses are Internet Protocol addresses.

1                   14. The invention of claim 13 wherein the plurality of service  
2 networks are operated by different Internet Service Providers.

- 1                   15. The invention of claim 13 wherein the plurality of service  
2   networks offer access to different Internet Protocol-based services.